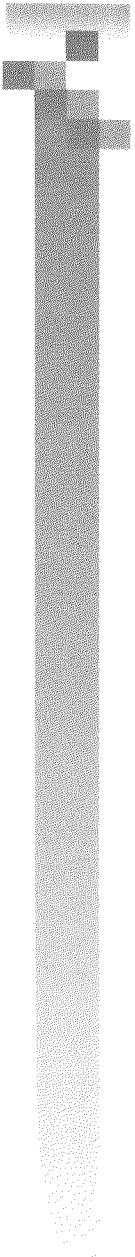


# **VERIZON AIRPHONE**

Presentation to  
Paul Margie, Legal Advisor to Commissioner Capps  
Regarding

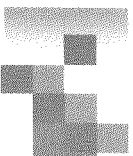
**WT Docket No. 03-103**  
**“Air-to-Ground Service Rules”**

September 27, 2004



## **Airfone's Commitment to the Customer**

- ◆ Airfone has a long history of serving the flying public.
  - Invested considerable capital in Air-to-Ground (ATG) network.
  - Committed to the development and growth of ATG business.
- ◆ Airfone has pushed the limits of technological capability within the bounds of current regulations.
- ◆ Customers are demanding a wider breadth of services beyond what narrowband technology permits.
- ◆ Airfone is ready, willing, and able to meet this demand (with a commercial launch in 2005) if the Commission's rules permit it.



# Airfone Services

## Potential Federal Features

Emergency Broadcast

Video Surveillance

Encryption

Call Priority

Federal Portal

(JetConnect)

Connection to NOC

Others TBD

## Data

Email

Instant Messaging

Text Messaging

WIFI

Web Browsing

Other Broadband

## Voice

Air-to-ground

Ground-to-air

Seat-to-seat

Air-to-air

Seat-to-flight deck

Speed dialing

3-Way Calling

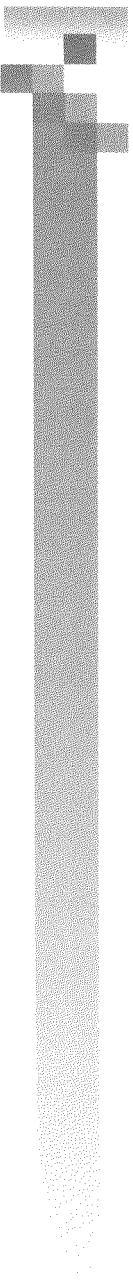
Collect Calling

Info Services

Cellular Call Forwarding

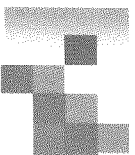
WIFI

**STAY CONNECTED IN THE AIR**



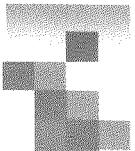
## **Broadband is the Goal**

- ◆ Consumers want in-flight access to the same kinds of broadband services they get on the ground.
- ◆ Airlines want broadband to improve operational efficiency.
- ◆ Law enforcement agencies want broadband for safety and national security purposes.
- ◆ Broadband service must be high-quality and available from takeoff to landing (“deck to deck” service).
- ◆ Satellite operators (Boeing, Inmarsat, ARIINC) already offer or are planning to offer broadband services, and ATG rules must be changed to allow terrestrial alternatives.



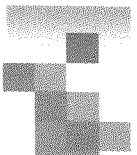
## Importance of “Deck-to-Deck” Service

- ◆ Full service (voice, data, video) required from take-off to landing (“deck-to-deck” service).
  - ☐ “Deck-to-deck” permitted today for narrowband via seat-back phones on commercial flights
  - ☐ Available today for narrowband services to private, military and governmental aircraft (50% of Airfone customers)
  - ☐ Required on commercial flights for official airline and law enforcement communications
- ◆ Band-sharing proposed by AirCell and Boeing would preclude “deck-to-deck” delivery of Broadband ATG.
  - ☐ Both admit interference will limit service below 10k feet.



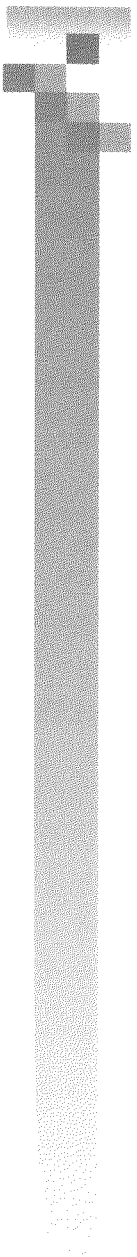
## **Verizon Airfone Proposal**

- ◆ Airfone needs sufficient unencumbered spectrum to deliver Broadband – that is the business imperative.
  - Flexibility to innovate and respond to market forces
  - Protection from interference that impedes delivery of high-quality advanced services to consumers
- ◆ Infrastructure vendors unanimously agree that minimum of 3 MHz is required and band sharing won't work.
  - Airfone's plan supports rapid deployment of Broadband ATG using "off-the-shelf" technology.
- ◆ Flexible, exclusive licenses are the only way to get Broadband to ATG customers. (PCS model)



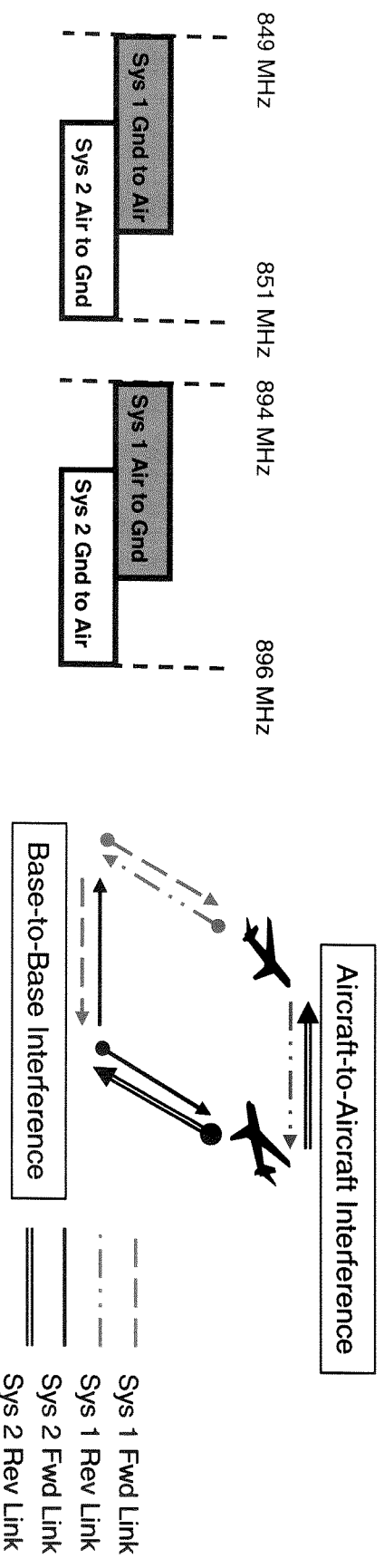
## **AirCell & Boeing Proposals**

- ◆ AirCell and Boeing propose band-sharing arrangements that would have up to four licensees share the ATG band.
- ◆ Each relies on equipment that is not available today.
- ◆ Each relies on inflexible and highly prescriptive rules that would restrict technology choices and service evolution.
- ◆ Neither would allow delivery of Broadband ATG.



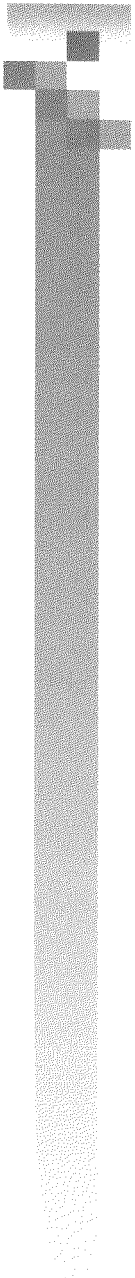
## Reverse Banding (Cross Duplex)

- ◆ Air-to-ground and ground-to-air assignments are reversed, resulting in significant potential for interference.



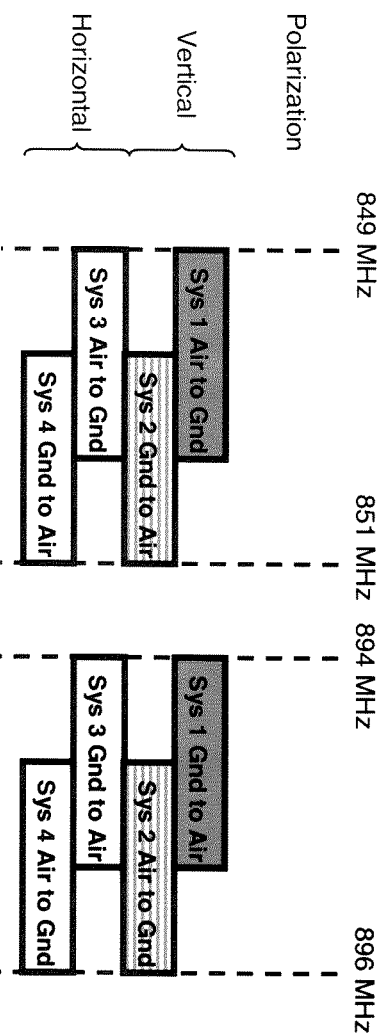
- ◆ AirCell proposes strict rules to minimize interference, which would preclude delivery of Broadband ATG.
- ◆ Even under these restrictions, ATG licensee would be subject to **substantial interference from Navy radar.**



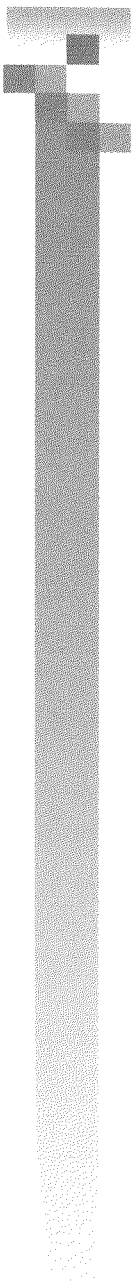


# Cross Polarization

- ◆ AirCell recommends the use of cross polarization, in addition to reverse-banding, to permit up to four systems to coexist.



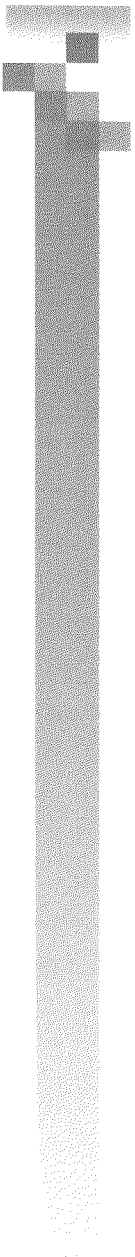
- ◆ Can't ensure polarization purity in mobile environment.
- ◆ Can't monitor polarization isolation to know when objective isn't met.
- ◆ Cross polarization results in unacceptable noise levels at the base station, and would preclude service in areas around airports.



## Inflexible Operating Requirements

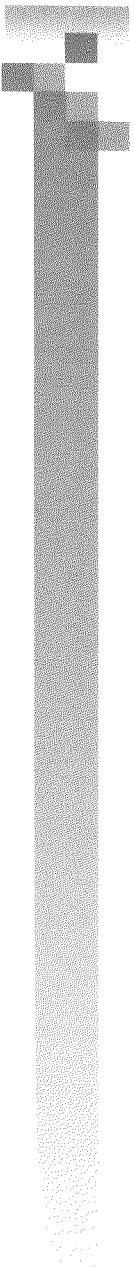
AirCell and Boeing propose:

- ◆ Use of **specialized antennas** that are not commercially feasible, and would not address all interference concerns.
- ◆ **Strict power limits** that would severely limit data rates (48 kbps) and preclude the delivery of Broadband ATG.
- ◆ **Mandatory base station separation** (102 mi) that would permit only one provider to serve airports, constrain system growth, and require the FCC to manage the process for locating ground stations.



## **Incumbency Issues**

- ◆ Airfone has invested considerable time and money in pioneering the ATG service.
- ◆ Airfone should be allowed to continue its existing service for as long as the market supports it.
  - Right to a reasonable renewal expectancy
  - No revocation or arbitrary termination date
- ◆ If relocated, Airfone should be compensated for costs to relocate to comparable spectrum.
- ◆ Airfone should be permitted to bid on any ATG license.



## Conclusions

- ◆ There is a high demand for Broadband ATG, and FCC rules must be changed to enable terrestrial alternatives to existing satellite-based services.
- ◆ Broadband service must be high-quality and available from takeoff to landing (“deck to deck” service).
- ◆ “Exclusive use” licenses are the only way to ensure provision of high-quality Broadband ATG service.
- ◆ Band-sharing scenarios proposed by AirCell and Boeing would undermine delivery of Broadband ATG.
- ◆ Commission must protect Airtone’s incumbency rights.